Abstract of the Disclosure

A volume-adjusting insert for sample vessels comprises an elongated body with a septum seal on one end and a seal surface on the outside of the body. A through-chamber in the body provides a receiving chamber for a hypodermic needle inserted into the septum. The seal surface of the insert defines a reduced-volume sample chamber comprising the through-chamber and the vessel chamber portion of the sample vessel below the insert, or alternatively, below the seal surface. Sample fluid injected into, or withdrawn from, the insert communicates with the through-chamber and the lower vessel chamber. The device is particularly useful in converting muti-well microplates to low sample-volume vessels for automated sampling and testing, and allows the hydraulic pressure generated by a hypodermic needle to transport the sample fluid through the sample vessel and out of a bottom-extraction element.